

CLAIMS

I claim:

1. A cooling system for internal combustion engine comprising:
 - a multi-speed water pump connected to an internal combustion engine,
 - 5 said multi-speed water pump in fluid communication with said conventional internal combustion engine, said multi-speed water pump for pumping conventional refrigerant;
 - a radiator connected to said multi-speed water pump, said radiator in fluid communication with said multi-speed water pump;
 - 10 a first electronic expansion valve connected to said radiator, said electronic expansion valve in fluid communication with said radiator, said electronic expansion valve for metering said conventional refrigerant; and
 - a fresh air intake cooler connected to said first electronic expansion valve, said fresh air intake cooler in fluid communication with said first electronic
 - 15 expansion valve.
2. The cooling system for internal combustion engine of claim 1 further comprising:
 - a second electronic expansion valve connected to said first electronic
 - expansion valve, said second electronic expansion valve in fluid communication
 - 20 with said fresh air intake cooler for providing selective metering of said conventional refrigerant for cooling in said fresh air intake cooler.

3. The cooling system for internal combustion engine of claim 1 further comprising:
a first check valve connected to said radiator; said first check valve in fluid communication with said radiator; and
a second check valve connected to said fresh air intake cooler, said second
5 check valve in fluid communication with said fresh air intake cooler, said second check valve connected to said first check valve, said second check valve in fluid communication with said first check valve.
4. The cooling system for internal combustion engine of claim 3 further comprising:
10 a filter drier connected to said first electronic expansion valve, said filter drier in fluid communication with said first electronic expansion valve.
5. The cooling system for internal combustion engine of claim 4 further comprising:
a heat exchanger connected to said filter drier, said heat exchanger in fluid
15 communication with said filter drier, said heat exchanger connected to said second check valve, said heat exchanger in fluid communication with said second check valve.
6. The cooling system for internal combustion engine of claim 5 further comprising:
20 an accumulator connected to said heat exchanger, said accumulator in fluid communication with said heat exchanger.

7. The cooling system for internal combustion engine of claim 6 further comprising:
a variable speed compressor connected to said accumulator, said variable speed compressor in fluid communication with said accumulator.

5 8. The cooling system for internal combustion engine of claim 7 further comprising:
a liquid receiver connected to said heat exchanger, said liquid receiver in fluid communication with said heat exchanger.

10 9. The cooling system for internal combustion engine of claim 8 further comprising:
a headmaster thermostat valve connected to said liquid receiver, said headmaster thermostat valve in fluid communication with said liquid receiver, said headmaster thermostat valve for selectively metering said conventional refrigerant.

15 10. The cooling system for internal combustion engine of claim 9 further comprising:
a condenser connected to said headmaster thermostat valve, said condenser in fluid communication with said headmaster thermostat valve, said condenser connected to said variable speed compressor, said condenser in fluid communication with said variable speed compressor.

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11. The cooling system for internal combustion engine of claim 1 further comprising:

a water pump temperature sensor connected to said multi-speed water pump;

an engine water temperature sensor connected to said internal combustion engine;

a fresh air intake temperature sensor connected to said fresh air intake cooler; and

a control module electrically connected to said water pump temperature sensor, said control module electrically connected to said engine water temperature sensor, said control module electrically connected to said fresh air intake temperature sensor.

12. The cooling system for internal combustion engine of claim 7 further comprising:

a compressor load sensor connected to said variable speed compressor.

13. The cooling system for internal combustion engine of claim 10 further comprising:

a condenser temperature sensor connected to said condenser.

14. A cooling system for internal combustion engine comprising:

5 a multi-speed water pump connected to an internal combustion engine,
said multi-speed water pump in fluid communication with said conventional
internal combustion engine, said multi-speed water pump for pumping
conventional refrigerant;

a radiator connected to said multi-speed water pump, said radiator in fluid
communication with said multi-speed water pump;

10 a first electronic expansion valve connected to said radiator, said
electronic expansion valve in fluid communication with said radiator, said
electronic expansion valve for metering said conventional refrigerant;

a fresh air intake cooler connected to said first electronic expansion valve,
said fresh air intake cooler in fluid communication with said first electronic
15 expansion valve;

a second electronic expansion valve connected to said first electronic
expansion valve, said second electronic expansion valve in fluid communication
with said fresh air intake cooler for providing selective metering of said
conventional refrigerant for cooling in said fresh air intake cooler;

20 a first check valve connected to said radiator; said first check valve in fluid
communication with said radiator; and

a second check valve connected to said fresh air intake cooler, said second
check valve in fluid communication with said fresh air intake cooler, said second

check valve connected to said first check valve, said second check valve in fluid communication with said first check valve.

15. The cooling system for internal combustion engine of claim 14 further comprising:

5 a filter drier connected to said first electronic expansion valve, said filter drier in fluid communication with said first electronic expansion valve; and

a heat exchanger connected to said filter drier, said heat exchanger in fluid communication with said filter drier, said heat exchanger connected to said second check valve, said heat exchanger in fluid communication with said second check valve.

16. The cooling system for internal combustion engine of claim 15 further comprising:

15 an accumulator connected to said heat exchanger, said accumulator in fluid communication with said heat exchanger; and

a variable speed compressor connected to said accumulator, said variable speed compressor in fluid communication with said accumulator.

17. The cooling system for internal combustion engine of claim 16 further comprising:

20 a liquid receiver connected to said heat exchanger, said liquid receiver in fluid communication with said heat exchanger; and

a headmaster thermostat valve connected to said liquid receiver, said headmaster thermostat valve in fluid communication with said liquid receiver, said headmaster thermostat valve for selectively metering said conventional refrigerant.

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18. The cooling system for internal combustion engine of claim 17 further comprising:

10 a condenser connected to said headmaster thermostat valve, said condenser in fluid communication with said headmaster thermostat valve, said condenser connected to said variable speed compressor, said condenser in fluid communication with said variable speed compressor.

- 15 19. The cooling system for internal combustion engine of claim 1 further comprising:

 a water pump temperature sensor connected to said multi-speed water pump;

 an engine water temperature sensor connected to said internal combustion engine;

20 a fresh air intake temperature sensor connected to said fresh air intake cooler;

 a compressor load sensor connected to said variable speed compressor;

 a condenser temperature sensor connected to said condenser; and

a control module electrically connected to said water pump temperature sensor, said control module electrically connected to said engine water temperature sensor, said control module electrically connected to said fresh air intake temperature sensor, said control module electrically connected to said compressor load sensor, said control module electrically connected to said condenser temperature sensor.

20. A cooling system for internal combustion engine comprising:

a multi-speed water pump connected to an internal combustion engine, said multi-speed water pump in fluid communication with said conventional internal combustion engine, said multi-speed water pump for pumping conventional refrigerant;

a radiator connected to said multi-speed water pump, said radiator in fluid communication with said multi-speed water pump;

a first electronic expansion valve connected to said radiator, said electronic expansion valve in fluid communication with said radiator, said electronic expansion valve for metering said conventional refrigerant;

a fresh air intake cooler connected to said first electronic expansion valve, said fresh air intake cooler in fluid communication with said first electronic expansion valve;

a second electronic expansion valve connected to said first electronic expansion valve, said second electronic expansion valve in fluid communication

with said fresh air intake cooler for providing selective metering of said conventional refrigerant for cooling in said fresh air intake cooler;

a first check valve connected to said radiator; said first check valve in fluid communication with said radiator;

5 a second check valve connected to said fresh air intake cooler, said second check valve in fluid communication with said fresh air intake cooler, said second check valve connected to said first check valve, said second check valve in fluid communication with said first check valve;

10 a filter drier connected to said first electronic expansion valve, said filter drier in fluid communication with said first electronic expansion valve;

a heat exchanger connected to said filter drier, said heat exchanger in fluid communication with said filter drier, said heat exchanger connected to said second check valve, said heat exchanger in fluid communication with said second check valve;

15 an accumulator connected to said heat exchanger, said accumulator in fluid communication with said heat exchanger;

a variable speed compressor connected to said accumulator, said variable speed compressor in fluid communication with said accumulator;

20 a liquid receiver connected to said heat exchanger, said liquid receiver in fluid communication with said heat exchanger;

a headmaster thermostat valve connected to said liquid receiver, said headmaster thermostat valve in fluid communication with said liquid receiver,

said headmaster thermostat valve for selectively metering said conventional refrigerant;

a condenser connected to said headmaster thermostat valve, said condenser in fluid communication with said headmaster thermostat valve, said condenser connected to said variable speed compressor, said condenser in fluid communication with said variable speed compressor;

a water pump temperature sensor connected to said multi-speed water pump;

an engine water temperature sensor connected to said internal combustion engine;

a fresh air intake temperature sensor connected to said fresh air intake cooler;

a compressor load sensor connected to said variable speed compressor;

a condenser temperature sensor connected to said condenser;

a condenser fan in pneumatic communication with said condenser;

a control module electrically connected to said water pump temperature sensor, said control module electrically connected to said engine water temperature sensor, said control module electrically connected to said fresh air intake temperature sensor, said control module electrically connected to said compressor load sensor, said control module electrically connected to said condenser temperature sensor; and

a main power module electrically connected to said control module, said main power module electrically connected to said multi-speed water pump, said